REMARKS

The following remarks are made in response to the Office Action mailed February 23, 2009. Claims 7-30 and 42-49 have been withdrawn from consideration. Claims 1 and 39-41 have been previously cancelled without prejudice. Claim 35 has been allowed. Claims 2-6, 31-34 and 36-38 were rejected. With this Response, claim 31 has been amended. Claims 2-6 and 31-38 remain pending in the application and are presented for reconsideration and allowance.

Claim Rejections under 35 U.S.C. § 103

Claims 2 and 6 were rejected under 35 U.S.C. 103(a) as being unpatentable over US Patent No. 5,023,667 to Negoro et al. ("Negoro") in view of US Patent No. 5,419,780 to Suski ("Suski").

Claims 3-5, 31-34, and 36-38 were rejected under 35 U.S.C. 103(a) as being unpatentable over Negoro in view of US Patent No. 6,624,349 to Bass and Suski.

Independent Claim 2

Applicants submit that neither Negoro nor Suski, either or in combination, teach or suggest the apparatus as defined by independent claim 2. Negoro describes a laser printer 10 which prints on a continuous form 20 (Col. 5, lines 26-28) and includes a fixing unit 8 comprising a fixing roller pair 81 consisting of a heat roller 81A and a backup roller 81B (Col. 6, lines 52-53), and a pair of dust brushes 40 (Col. 5, lines 64-67). A gear motor 10 is driven to operate a cam 83 to cause a backup roller 81B to press against a heat roller 81A when in a fixing operative position (i.e. when the laser printer is printing), and driven to operate cam 83 to cause backup roller 81B to move apart from heat roller 81A when the laser printer is in a "print stand-by state" (Col. 7, Lines 17-35; Col. 8, Lines 19-32, Abstract, and Figures 2 and 3).

The Office Action concedes that Negoro fails to teach a **thermoelectric generator thermally coupled to a fuser assembly which is configured to convert heat from the fuser assembly to an electrical energy to drive a motor to separate a pair of platen**

rollers, as defined by independent claim 2. However, the Office Action asserts that such limitations would be obvious to one of ordinary skill in the art in view of Suski.

Suski describes a thermoelectric generator 50 coupled to and configured to convert heat from a semiconductor device 12 to electrical energy, wherein the electrical energy is used to power a fan 70 to cool the semiconductor device 12 (Abstract, Figures 3-5), thereby enabling semiconductor device 12 to be cooled without increasing the power consumption required to be provided by a power source of a computer system of which semiconductor device 12 is a part, such as the batteries of a laptop computer, for example (Col. 4, lines 29-57).

The Office Action, in view of the Suski teaching of cooling a semiconductor chip with a thermoelectrically-driven cooling fan, asserts that it would have been obvious for one of ordinary skill in the art to simply install a thermoelectric generator in laser printer 10 of Negoro in order to convert heat from roller 81A to electrical energy to actuate backup roller 81B for the purpose of reducing the energy consumption of laser printer 10, thereby arriving at the apparatus of independent claim 2. The Applicants respectfully disagree.

Negoro is concerned only with preventing defects in images on continuous form 20, including using dust brushes 41 and 42 to sweep dust from continuous form 20 (Col. 5, line 64 – Col. 6, line 5), and separating the continuous form 20 from heat roller 81A when laser printer 10 is in a “print stand-by state” so as to prevent problems associated with continuous application of heat to continuous form 20, such as blistering and burning (Col 2, lines 4-12; and Col. 8, lines 19-32). Negoro is not concerned with the energy consumption or operating efficiency of laser printer 10. In fact, Negoro makes no mention whatsoever of how gear motor 10 is powered, or for that matter, of any power source associated with laser printer 10. Negoro certainly makes no mention of laser 10 being powered from a power source of limited capacity, such as a battery, so that energy consumption is of concern.

As such, when viewing the teachings of Negoro, one of ordinary skill in the art would have no reason to be concerned with the power consumption of laser printer 10 and, thus, would have no reason to combine the Negoro with Suski so as to employ a non-conventional power source, such as a thermoelectric generator 50 of Suski, to power gear motor 10 in order to improve the operating efficiency of laser printer 10.

Additionally, Suski teaches an apparatus for recovering power dissipated in the form of heat by semiconductor integrated circuits (Title, Abstract), not recovering power from heat dissipated by large mechanical devices, such as a fuser assembly of a laser printer. Thus, at best, even if one or ordinary skill in the art would combine the teachings of Negoro with those of Suski, it would be to employ a thermal electric generator with semiconductor circuits of laser printer 10 of Negoro, not with heated roller 81A.

In view of the above, Applicants respectfully submit that **a thermoelectric generator thermally coupled to and configured to convert heat from a fuser assembly to an electrical energy, and a motor using the electrical energy to separate a pair of platen rollers**, as defined by independent claim 2, is non-obvious over the Negoro in view of Suski. As such, Appellants respectfully request that the rejection of claim 2 under 35 U.S.C. § 103 be withdrawn and that independent claim 2 be allowed.

Independent Claim 31

Applicants submit that neither Negoro, Suski, nor Bass, either alone or in combination, teach or suggest the imaging system as defined by independent claim 31.

Independent claim 31 includes limitations similar to those described above with respect to independent claim 2. As such, for at least reasons similar to those remarked upon above with respect to independent claim 2, Applicants submit that the combination of Negoro, Suski, and Bass fails to teach or suggest **a fuser assembly including a thermoelectric generator** as defined by independent claim 31. Additionally, as described below, Applicants further submit that Negoro and Suski in further view of Bass fail to teach or suggest **the controller** of independent claim 31, as asserted by the Office Action (Office Action, page 5).

Bass describes a heat of fusion thermoelectric generator that is used to generate electricity to power an electrically powered device 41 (Abstract, Figure 1, Col. 3, lines 43-45). According to Bass, electrical source 38 powers heating coil 6 which melts a phase change material located in heat source capsule 4, thereby causing a heat of fusion to be generated by heat source capsule 4 (Col. 4, lines 39-49). A thermoelectric module 8 converts the heat from heat capsule 4 to electricity which is used to power electrically powered device

41 (Col 4, lines 61-67; Col. 5, lines 16-18). A controller 28 causes electricity to heating coil 6 from electrical source 38 to be turned on and off by controlling a switch 39 based on a temperature of the phase change material inside heat capsule 4 provided by a thermocouple 9 (Col. 4, lines 49-58).

According to Bass, electricity to electrically powered device 41 is provided only by thermoelectric module 8, and only as long as there is a temperature differential across thermoelectric module 8 (Col. 5, .lines 18-23; Figure 1). Electric source 38 is never connected to electrically powered device 44, but is connected/disconnected only to heating coil 6 via switch 39 based on the temperature of the phase change material within heating capsule 4. Thus, electrically powered device 44 is not normally powered by electrically source 38 and powered by thermoelectric module 8 in the alternative, but is always powered by electricity from thermoelectric module 8.

Accordingly, Applicants submit that neither Negoro, Suski, nor Bass, either alone or in combination, teach or suggest **normally powering a separator mechanism from a first electrical energy from a power supply, and upon detecting that a first parameter level of the first electrical energy is less than or substantially equal to a threshold level, power the separator mechanism from a second electrical energy from a thermoelectric generator**, as defined by independent claim 31. As such, Applicants respectfully request that the rejection of independent claim 31 under 35 U.S.C. § 103 be withdrawn and that independent claim 31 be allowed.

Dependent Claims 3-6, 32-34, and 36-38

Claims 3-6 depend either directly or indirectly from and further define patentably distinct independent claim 2, and claims 32-34 and 36-38 depend either directly or indirectly from and further define patentably distinct independent claim 31. As such, Applicants respectfully request that the rejection of dependent claims 3-6, 32-34, and 36-38 under 35 U.S.C. § 103 also be withdrawn and that dependent claims 3-6, 32-34, and 36-38 be allowed as well.

With respect to claim 3, in addition to being allowable for depending from and further defining patentably distinct independent claim 2, Applicants submit that claim 3 is independently allowable for those reasons remarked upon above with respect to independent claim 31 in regard to Bass.

Allowable Subject Matter

Claim 35 is allowed.

CONCLUSION

In view of the above, Applicants respectfully submit that pending claims 2-6 and 31-38 are in form for allowance and are not taught or suggested by the cited references. Therefore, reconsideration and withdrawal of the rejections and allowance of claims 2-6 and 31-38 is respectfully requested.

No fees are required under 37 C.F.R. 1.16(h)(i). However, if such fees are required, the Patent Office is hereby authorized to charge Deposit Account No. 08-2025.

The Examiner is invited to contact the Applicants' representative at the below-listed telephone numbers to facilitate prosecution of this application.

Any inquiry regarding this Amendment and Response should be directed to either Steven E. Dicke at Telephone No. (612) 573-2002, Facsimile No. (612) 573-2005 or Steven Ormiston at Telephone No. (208) 634-8591, Facsimile No. (650) 852-6063. In addition, all correspondence should continue to be directed to the following address:

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Respectfully submitted,

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